

Wollo University
Kombolcha Institute of Technology
Department of Hydraulic & Water Resources Engineering

Hydraulic Structure-II (HWRE-3132) Assignment #3..... (15%)

1) *Design an aqueduct to carry water of an earth canal over a drainage with the following data: (7.5)*

✓ RL of drainage	= 1520.00 m
✓ HFL of drainage	= 1523.00 m
✓ Bed width of drainage	= 50.00 m
✓ Side slope of drainage at crossing	= 0.5H:1V
✓ RL of ground	= 1525.00 m
✓ RL of bed of canal	= 1524.50 m
✓ Discharge of canal	= 30 m³/s, Q drainage = 110 m³/s
✓ Depth of water in canal	= 1.70 m
✓ Bed width of canal	= 22.00 m

Give a neat sketch with dimensions of the designed structure.

2) *Design a siphon aqueduct for the following data (7.5)*

Canal

✓ Discharge	= 56 m ³ /s
✓ Bed width	= 32 m
✓ Full supply depth	= 1.98 m
✓ RL of bed	= 2267.0 m

Drainage

✓ High flood discharge	= 425 m ³ /s
✓ HFL	= 2268.2 m
✓ General bed level of low water cross-section	= 2265.5 m
✓ General ground level	= 2267.2 m